REMARKS

Claims 1-5, 8-12, and 15-19 are pending. Claims 6, 7, 13, and 14 are hereby cancelled without prejudice. Claims 1-5 and 8-12 have been amended. Claims 20 and 21 have been added. No new matter has been added.

OBJECTIONS TO THE SPECIFICATION

The specification was objected to for failing to sufficiently support Claims 6, 7, 13, and 14. Applicants note that Claims 6, 7, 13, and 14 have been cancelled, and respectfully request that this objection be withdrawn.

OBJECTIONS TO THE CLAIMS

Claims 2-7 are objected to for referencing the cavity of "the light emitting diode." Claims 2-5 have been amended so as to obviate this objection. Claims 6 and 7 have been cancelled. Applicants respectfully request that this objection be withdrawn.

35 U.S.C. § 112, ¶ 2 REJECTIONS

Claims 6, 7, 13, and 14 are rejected under 35 U.S.C. 112, ¶ 2, as being indefinite. These Claims have been cancelled. Applicants respectfully request that this rejection be withdrawn.

35 U.S.C. § 103(A) REJECTIONS

Claims 1-18 are rejected under 35 U.S.C. 103(a) as being obvious over Ishinaga, U.S. Patent No. 6,355,946, in view of Collins III et al., U.S. Pub. No. 2005/0184387.

The Examiner is respectfully directed to independent Claim 1, which recites that an embodiment of the present invention is directed towards:

> A light emitting diode package comprising:
> a ceramic substrate for mounting a light emitting diode, said substrate defining a cavity with a ceramic sidewall, wherein said cavity is shaped to focus light in a predetermined direction; and
> a metallic coating on a portion of said ceramic substrate for reflecting light in a predetermined direction.

Claim 8 recites similar limitations. Claims 2-5 are dependent on Claim 1, and recite further features of the claimed embodiments. Claims 9-12 and 15-18 are dependent on Claim 8, and recite further features of the claimed embodiments.

The rejection suggests that Ishinaga, in combination with Collins III, teaches every element of the claimed embodiments. Applicants have reviewed the cited art, and respectfully disagree. Applicants assert that Ishinaga, alone or in combination with Collins III, fails to teach a ceramic substrate for mounting a light emitting diode, said substrate defining a cavity with a ceramic sidewall, as claimed.

Applicants understand Ishinaga to discuss a semiconductor device for backlighting a non-circular push button of an electronic device (col. 2, ln. 10-13). Applicants acknowledge that Ishinaga describes a substrate (1A; see col. 3, ln. 45-53), as well as a cavity (50a; see col. 4, ln. 18-24). However, Ishinaga does not teach the substrate defining the cavity, as claimed. Nor does Ishinaga teach forming the side wall of the cavity from a ceramic material, also as claimed. Ishinaga teaches a substrate, formed as part of a base unit, on which electrodes are formed (col. 3, ln. 44-58). Ishinaga teaches a separate casing (5) with a cavity (50a), which is attached to the base unit after the LED chip (3A) has been connected to the substrate (col. 4, ln. 43-52). As such, Ishinaga fails to anticipate or render obvious a light emitting diode

package, having a ceramic substrate for mounting a light emitting diode, said substrate defining a cavity with a ceramic sidewall, as claimed.

The rejection suggests the combination of Ishinaga and Collins III. Applicant respectfully contends that the combination of these references is not suggested by the teachings of either Ishinaga or Collins III. The semiconductor device of Ishinaga is proposed as a backlight for a non-circular push button of an electronic device (col. 2, ln. 10-13). The ceramic substrate of Collins III is proposed as part of a metal oxide varistor (¶ 6), used for transient voltage suppression. Applicant respectfully contends that one of ordinary skill in the art, having the teachings both Ishinaga and Collins III available, would not be motivated to combine the semiconductor device of Ishinaga with the ceramic substrate of Collins III, in a way so as to render obvious the claimed embodiments of the present invention. Applicants therefore request that this rejection be withdrawn and the Claims allowed, or that a citation to a motivation to combine be provided.

Moreover, even if the teachings of Ishinaga and Collins III are combined, this combination fails to anticipate or render obvious a light emitting diode package, having a ceramic substrate for mounting a light emitting diode, said substrate defining a cavity with a ceramic sidewall, as claimed. The ceramic substrate of Collins III is a flat piece, used as part of a varistor. Collins III does not teach or suggest forming a cavity with a ceramic sidewall, as claimed. The ceramic sidewall has benefits beyond those associated with the ceramic substrate of Collins III. For example, neither Collins III nor Ishinaga suggest the use of a

ceramic sidewall to reduce or prevent light leakage (see, e.g., the present application, p. 8, ln. 4-7).

Therefore, Applicants respectfully contend that Ishinaga, alone or in combination with Collins III, fails to anticipate or render obvious the embodiments of the present invention recited in Claims 1 and 8. As such, Applicants contend that Claims 1 and 8 are in condition for allowance. Accordingly, Applicants assert that Claims 2-5, dependent on Claim 1, and Claims 9-12 and 15-18, dependent on Claim 8, overcome the basis for rejection as being dependent on allowable base claims.

Claim 19 is rejected under 35 U.S.C. 103(a) as being obvious over Ishinaga, in view of Collins III, further in view of Abe, U.S. Patent No. 5,177,593.

Applicants assert that Abe does not remedy the defect in Ishinaga and Collins III, described above. Applicants understand Abe to discuss methods of manufacturing a display device with LEDs, to try and decrease defects caused by the difference in thermal expansion coefficients (col. 2, ln. 25-29 and 55-59). The method of Abe calls for a flat substrate to be laid down (34; see Figure 5A, col. 4, ln. 44-48). On this substrate, a lead interconnection is formed (32; see Figure 5B, col. 4, ln. 48 – col. 5, ln. 8). Only then is the reflection case, with a cavity, formed (31; see Figure 5C, col. 5, ln. 9-17). As with Collins III, discussed above, Abe does not suggest using a ceramic sidewall for the cavity. As such, Abe does not anticipate or render obvious a light emitting diode package, having a ceramic substrate for mounting a light emitting diode, said substrate defining a cavity with a ceramic sidewall, as claimed.

Therefore, Applicants respectfully contend that Ishinaga, alone or in combination with Collins III and Abe, fails to anticipate or render obvious the embodiments of the present invention recited in Claim 19. As such, Applicants contend that Claim 19 is in condition for allowance.

Conclusion

In light of the above-listed amendments and remarks, Applicants respectfully request allowance of the remaining Claims.

The Examiner is urged to contact Applicants' undersigned representative if the Examiner believes such action would expedite resolution of the present Application.

Respectfully submitted,

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